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COMPLIANCE EVALUATION AND TECHNICAL REVIEW REPORT
FEASIBILITY STUDY REPORT
STANDARD CHLORINE OF DELAWARE, INC. SITE
DELAWARE CITY, DELAWARE
FEBRUARY 1993

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1.0 INTRODUCTION

CDM Federal Programs Corporation (FPC) received a work assignment (WA No. C03041 and WA NO.C03045) to provide technical enforcement support to EPA Region III under EPA Contract No. 68-W9-004. The purpose of this assignment is to provide oversight of the remedial investigation/feasibility study (RI/FS) field activities and to review and evaluate documents submitted by the responsible party (RP) or the RP's contractor in support of the RI/FS for the Standard Chlorine of Delaware, Inc. (SCD) site located in Delaware City, Delaware. This report presents the results of TES Team Member's evaluation of the February 1993 Feasibility Study report for the SCD site.

Standard Chlorine of Delaware, Inc. manufactures chlorobenzenes on a 46-acre site in Delaware City, Delaware. In September 1981, about 5,000 gallons of monochlorobenzene spilled from a railroad car on the Standard Chlorine property. Subsequent sampling was performed and identified chlorobenzenes in onsite soils, in shallow ground water underlying the site, and in nearby Red Lion Creek. The RP and their contractor, Roy F. Weston, Inc., have studied this problem and have prepared reports on the extent of contamination, evaluated remedial alternatives and feasible technologies, and have begun recovery of contaminated ground water at the site. In September 1985, the SCD site was proposed by the EPA for the National Priorities List (NPL).

On January 5, 1986, onsite storage tanks ruptured and 562,000 gallons of paradichlorobenzene and trichlorobenzene were spilled onto the SCD property and into the adjacent wetlands. The RP engaged a remedial contractor and initiated clean-up activities within hours of the spill occurrence. The RP and the clean-up contractor prepared the ESD detailing emergency clean-up activities and ongoing remedial activities at the SCD site.

Standard Chlorine signed a consent order with the Delaware Department of Natural Resources and Environmental Control (DNREC) on January 22, 1988. As required in the consent order, they submitted a Phase I RI/FS work plan for approval by DNREC. The consent order was then amended so that a single site-wide RI/FS could be performed. A revised RI/FS work plan was then submitted to EPA and DNREC and was approved for the current activities at the SCD site.

This evaluation report comprises five sections. Section 2.0 outlines the TES VII Team Member's approach to the compliance evaluation and technical review of the FS report. Section 3.0 presents general comments from the technical review, while Section 4.0 presents specific comments referenced to the appropriate section and page number of the FS report. Finally, Section 5.0 presents conclusions and recommendations that were developed from the technical review of the FS report.

2.0 APPROACH TO COMPLIANCE EVALUATION AND TECHNICAL REVIEW

The TES VII Team Member reviewed the February 1993 SCD FS report to assess the adequacy and completeness of the information to support the requirements of an FS. The scope and quality of the FS were evaluated with respect to (1) objectives for conducting an FS under the National Oil and Hazardous Substance Pollution Contingency Plan (NCP), as implemented under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and as amended under the Superfund Amendments and Reauthorization Act of 1986 (SARA), (2) concepts and technical standards for conducting an FS as discussed in "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (October 1988), and (3) procedures consistent with standard industry practices common to the technical issues in accordance with EPA policies. The TES VII Team Member's judgement of whether compliance deficiencies exist is based on the objectives and guidelines set forth in the NCP and U.S. EPA guidance.

3.0 GENERAL COMMENTS

This section summarizes general comments on the February 1993 FS report for the SCD site. These comments address items that were recurring throughout the report or items that refer to the overall tone of the report. Specific comments, referenced to the appropriate section and page number of the FS report, are provided in Section 4.0.

The major issues identified in the review of the February 1993 FS report were: (1) for the groundwater response actions, the alternatives should address not only the cleanup levels but also the time frame within which the remedial goals might be achieved; (2) the recovery of free product is not addressed in the Alternative 3 - Closure, in the discussion of installation of an enhanced groundwater extraction system to capture groundwater exiting the site; (3) the results of the treatability studies conducted to determine the viability of using biological treatment either in situ or ex situ for all surface soils and sediments above action levels should be taken into consideration before recommending a remedial action alternative; (4) the elimination of process options/remedial technologies such as soil vapor extraction to address the contaminated media; and (5) the presentation of a preferred or recommended alternative in the FS report.

In general, the FS report followed the format recommended in the EPA "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA", dated October 1988. The discussions involving the development of remedial alternatives, the screening of these alternatives, and the detailed analysis of the alternatives are thorough and are presented in a well written and concise manner. No major general concerns were identified in the TES VII Team Member's review of the FS report. However, specific comments are provided in Section 4.0 to assist the RF Contractor in enhancing the discussions presented in the report.

4.0 SPECIFIC COMMENTS

This section presents specific comments and questions, as well as typographical errors, pertaining to issues discussed in the February 1993 FS report for the SCD site. Comments are itemized by the specific section and page number of the FS report.

	<u>Section</u>	<u>Page</u>	<u>Comment</u>
1	Ex. Summary	ES-5	X Typographical error: "The assembled alternative were ..." should be "The assembled alternatives were..."
2	Ex. Summary	ES-5	O Alternative 3 (Closure) does not mention recovery of free product. Free product recovery should be included in all applicable remedial alternatives.
3	Ex. Summary	ES-7	O Alternative 3 (Closure) is recommended for selection as the remedial alternative. A recommendation should not be made in the FS report. Additionally, the long term effectiveness or permanency of this type of closure is questionable.
4	Ex. Summary	ES-8	The time frame for the natural attenuation process to degrade the contaminants is not addressed.
5	1.7	1-23	X Typographical error: the word "nonuniformity" is misspelled as "nonuniformily".
6	1.7	1-23	O The integrity of the cover over the soil piles and its ability to reduce the migration of contaminants due to volatilization and the durability of the cover are questionable.
7	2.1	2-1	X Typographical error: In the sixth line from top, "waiver in invoked" should be "waiver is invoked".
8	2.2.2.1	2-6	O No mention is made about obtaining a RCRA permit for proper onsite storage of hazardous wastes (soil piles).

<u>Section</u>	<u>Page</u>	<u>Comment</u>
7 2.2.2.2	2-7	The continuity and integrity of the said confining geologic unit (i.e., Marchantville Formation or Potomac clays) at the base of the Columbia Formation has reportedly been confirmed to some degree. However, continued monitoring of the Potomac aquifer would be appropriate in providing a level of protection for users of the Potomac aquifer.
10 3.3.2.11.1	3-40	The results of the treatability study for biological remediation should be incorporated into the FS report.
" 3.3.2.13.2	3-43	The results of the biological treatability study being conducted under the RI/FS program should be incorporated into the FS report.
12 3.5	3-62	○ The depth of the Catch Basin (Item 7) is not mentioned. *
13 5.2.6	5-7	○ The rate of the passive biodegradation mechanism should be incorporated in the text.
" 5.2	5-12	X The security fence should be not be drawn as a thick solid line in all the drawings.
1 5.4.2	5-27	The NPDES permit regulating the effluent discharge expires in September 1994. Therefore, a renewal should be obtained before its expiration.
14 6.1	6-2	It is mentioned that the onsite groundwater is expected to meet MCLs over long term. An approximate time frame should be furnished for each alternative. ○

5.0 CONCLUSIONS AND RECOMMENDATIONS

The TES VII Team Member evaluated the information contained in the FS report prepared by Roy F. Weston, Inc., for the Standard Chlorine of Delaware, Inc., (SCD) site (Roy F. Weston, February 1993). This report was reviewed to assess the RP contractor's adequacy and completeness of the information to support the requirements of a Feasibility Study.

In general, the FS report is presented in a well written and concise manner. The figures and tables supplement the narrative discussions providing valuable information in a summary form. The FS report followed the format recommended by the EPA "Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA," dated October 1988. However, the specific comments provided in Section 4.0 of this report should be addressed in the final version of the FS report. To complete the report, the results of the treatability investigations for biological treatment should be incorporated into the report.

The presence of a continuous confining layer overlying and as a section of the Potomac aquifer was reportedly confirmed across the study area with some degree of certainty during the RI at the Standard Chlorine of Delaware site. However, it would be prudent and provide a level of protection for users of the Potomac aquifer to establish a monitoring program for the aquifer. Monitoring of the aquifer on a regular basis (semi-annual for example) would provide early warning of a discharge and allow a timely response.

The soil vapor extraction technology is suitable for removing highly volatile organic compounds from unsaturated soils. The use of vapor extraction systems is typically limited to permeable unsaturated soils such as sands, gravels, and coarse silts, which have high diffusion rates. The volatile nature of the site contaminants, and the permeable nature of the unsaturated soils (fine and medium sand w/subordinate amounts of gravel and silt) makes the soil vapor extraction amenable for treating contaminated surficial and sub-surficial soils at the SCD site. This remedial alternative should be considered.